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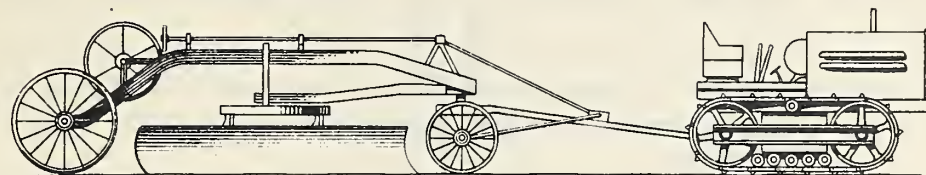
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# CONSTRUCTION



## HINTS

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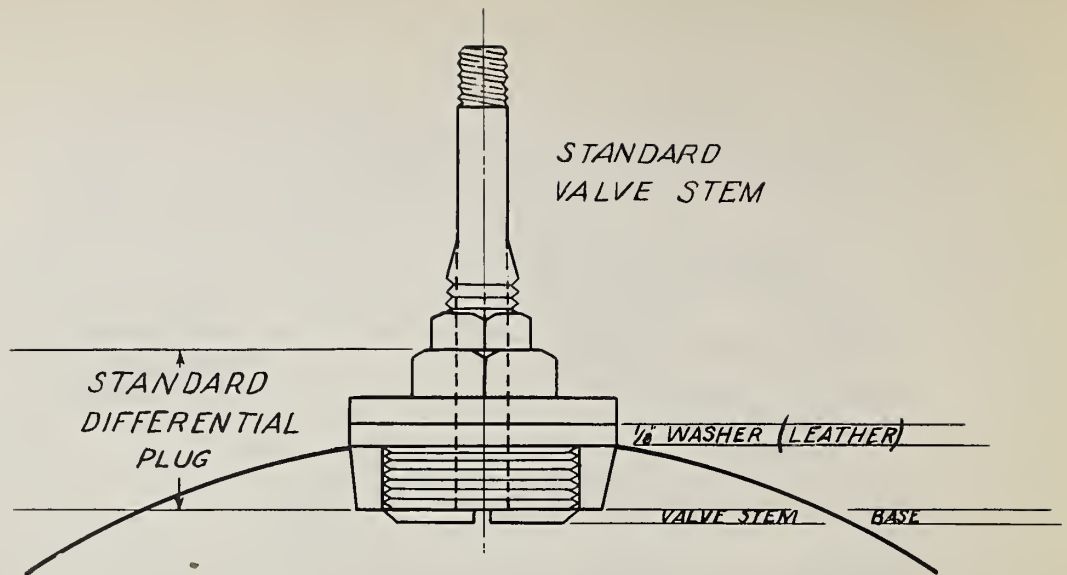
### LUBRICATION

Correct lubrication saves costly repair bills. The date of oil filter changes should be scratched on the filter cover for reference.

In order to obtain maximum service life from pistons, cylinders, rings, etc., it is essential that oil filters be changed frequently in accordance with operating conditions.

The time for change will have to be, to some extent, a matter for individual judgment, but in no case should a filter be used for more than 8,000 miles, nor for longer than one year, regardless of mileage. Under extremely severe conditions of dust or continuous high speed operation, they should be changed as often as every 4,000 miles.

(Over)



A Device to Aid the Removal of Differential Lubricant

I use the above device when changing the lubricant in the differential. It not only removes more grease but speeds up the job.

Drill a standard differential filler plug large enough to insert a straight valve stem. Remove the valve stem nut, insert the valve stem from the inner to the outer side of the filler plug and when tightened the valve stem nut forms an air tight joint.

When air pressure is applied to the differential, I find that it works better to remove only the bottom differential cover bolt instead of the customary two or three.

Submitted by: M.L. Burgess, Mechanic. Camp S-52,  
West Goshen, Connecticut

## WATER LEVEL

Submitted by Ira Tanner, Superintendent, Camp F-10, Pondfork, Missouri.

The water level is an exact and inexpensive instrument which can be used by anyone and is unsurpassed in setting tower footings, foundations, etc.

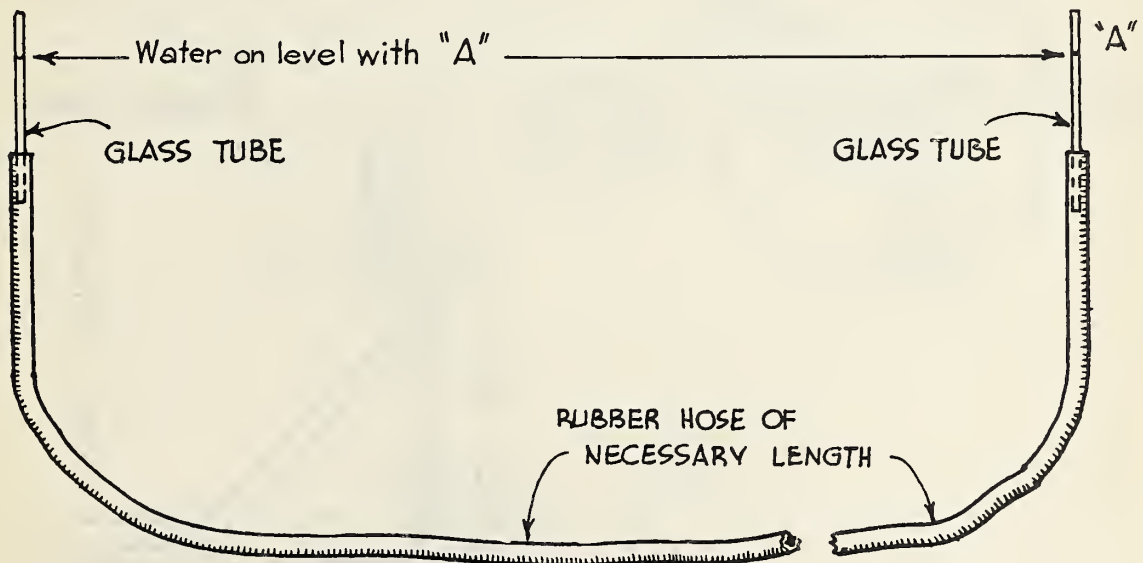
A piece of 5/8 inch tubing any length, usually about 25 feet long, in each end of which has been inserted a glass tube of the steam boiler water glass variety. (Both tubes must be of the same diameter.)

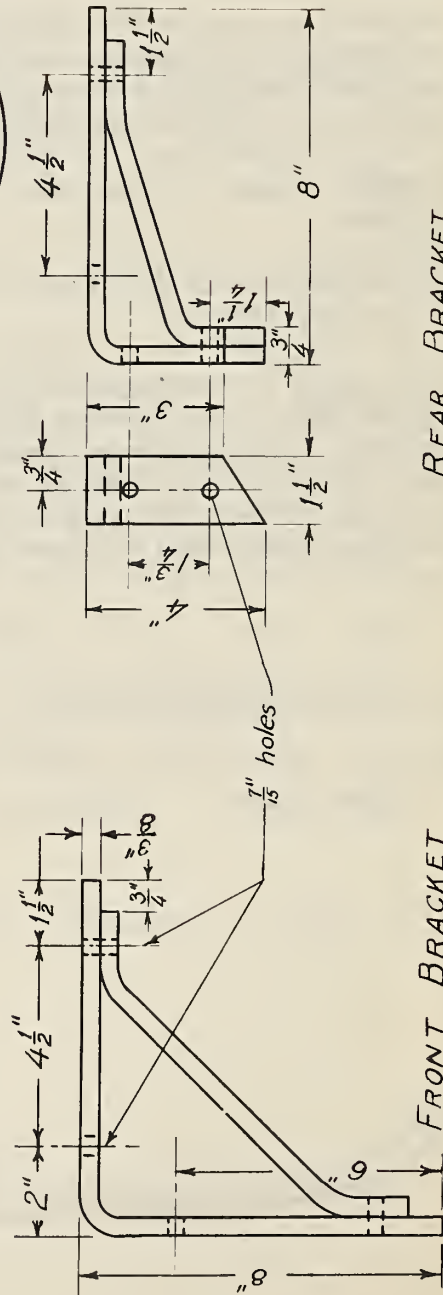
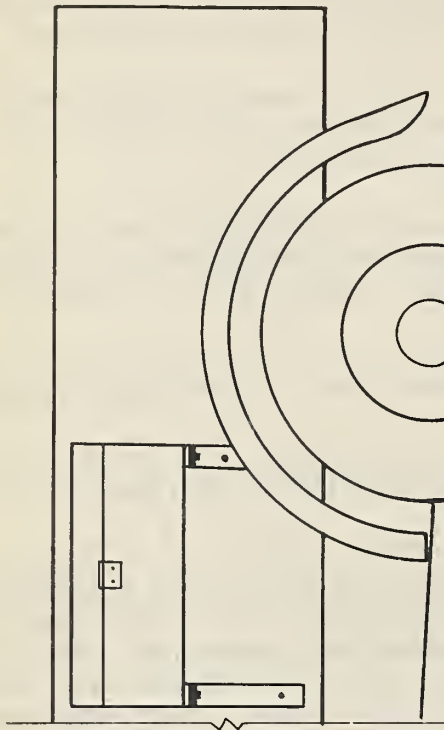
The level is filled with water by syphoning. Much care must be used that no air bubbles are left in the hose. Place the two glass tubes with their ends on the same level and higher than the hose. (There should be about 4 inches between top of glass and water level.)

As "water seeks its own level", the water level in the glass tubing will remain the same.

This instrument is difficult to explain, but if put to trial will immediately simplify itself.

Place glass tube along-side a given level mark with about 4 inches from mark to top of tube. Carry other glass tube to any object on which same level mark is desired. By raising or lowering extended glass, water will raise or lower in tube at original starting point. When water is on level with original level mark it is also at the same level on desired object. No attention need be given to hose other than eliminating kinks.



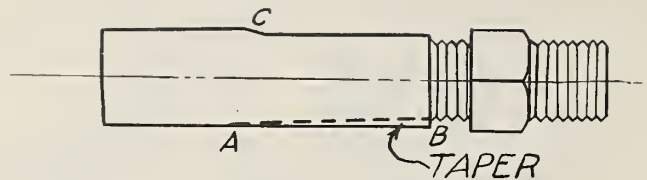


RELOCATION OF EMERGENCY GAS  
OIL AND WATER KIT  
H.E. Bunn, C.E. Nicholson  
R.O. Shop 6-19-36

NEW LOCATION ON LEFT SIDE OF PICKUP BED FOR EMERGENCY KIT  
TO PREVENT ITS BEING DAMAGED BY RUMORS OR LOW ROLL







### Improving the Locking Qualities of the King Pin Lock Bolt of a Chevrolet

When rebushing Chevrolet spindles, I find that the king-pin lock bolt does not always lock the king pin tightly in the axle. To overcome this difficulty, I grind a new taper A-B on the opposite side of the lock bolt. With the slow taper A-B there is no shoulder (C) to butt against the king-pin.

Submitted by: M.L. Burgess, Camp S-52 West Goshen, Connecticut



FIGURE A.

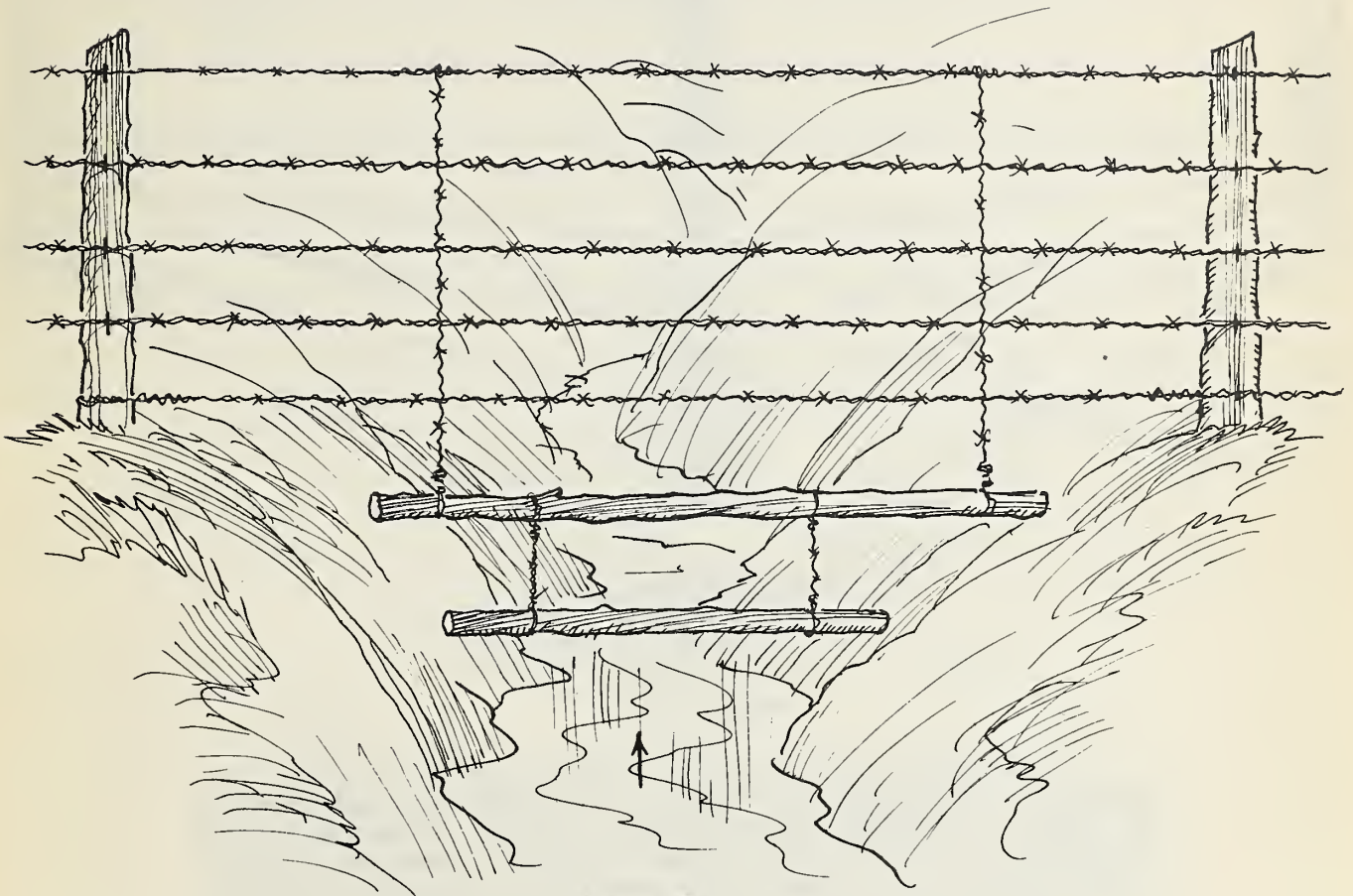


Figure "A"

In crossing running streams or draws where washes are frequent, the water gate swings freely with the rise and fall of the water. The perpendicular wires are twisted around each of the fence wires and tied to poles three to four inches in diameter. The poles should be long enough to span from bank to bank to prevent stock from going around at the ends.

FENCE CONSTRUCTION METHODS  
W. I. Rutherford, Foreman  
San Isabel Forest, R-2.

FIGURE B.

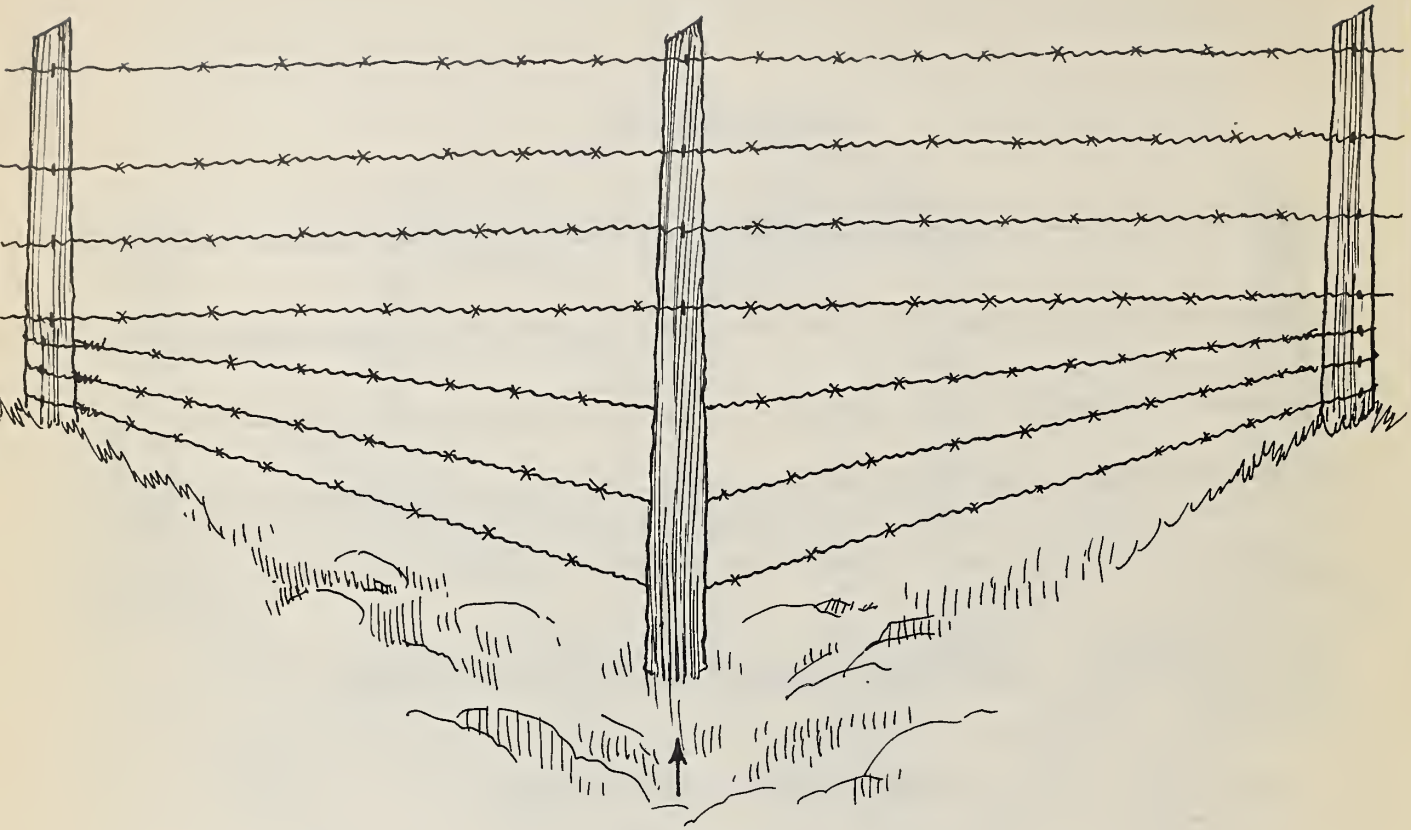


Figure "B"

This method does very well in draws that do not carry fast drainage. This can be determined by the amount of vegetation, or the lack of it growing in the bottom. However, it is best to put the under wires on the down stream side of the draw, regardless of which side of the fence is National Forest. The most that a rush of water and debris will do is to pull the staples from the post. This will let the wires swing free and will be easily maintained afterward.

If the span across the draw measures more than two rods it is better to use the ordinary length posts and string the wire down into the draw as shown in Figure "C".

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FIGURE D.

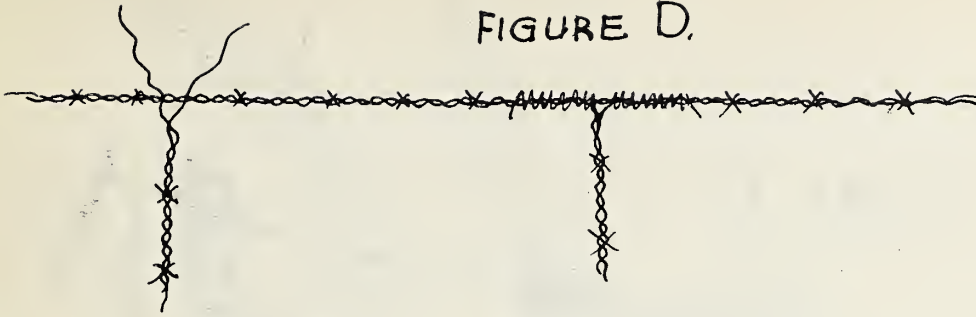


FIGURE C.

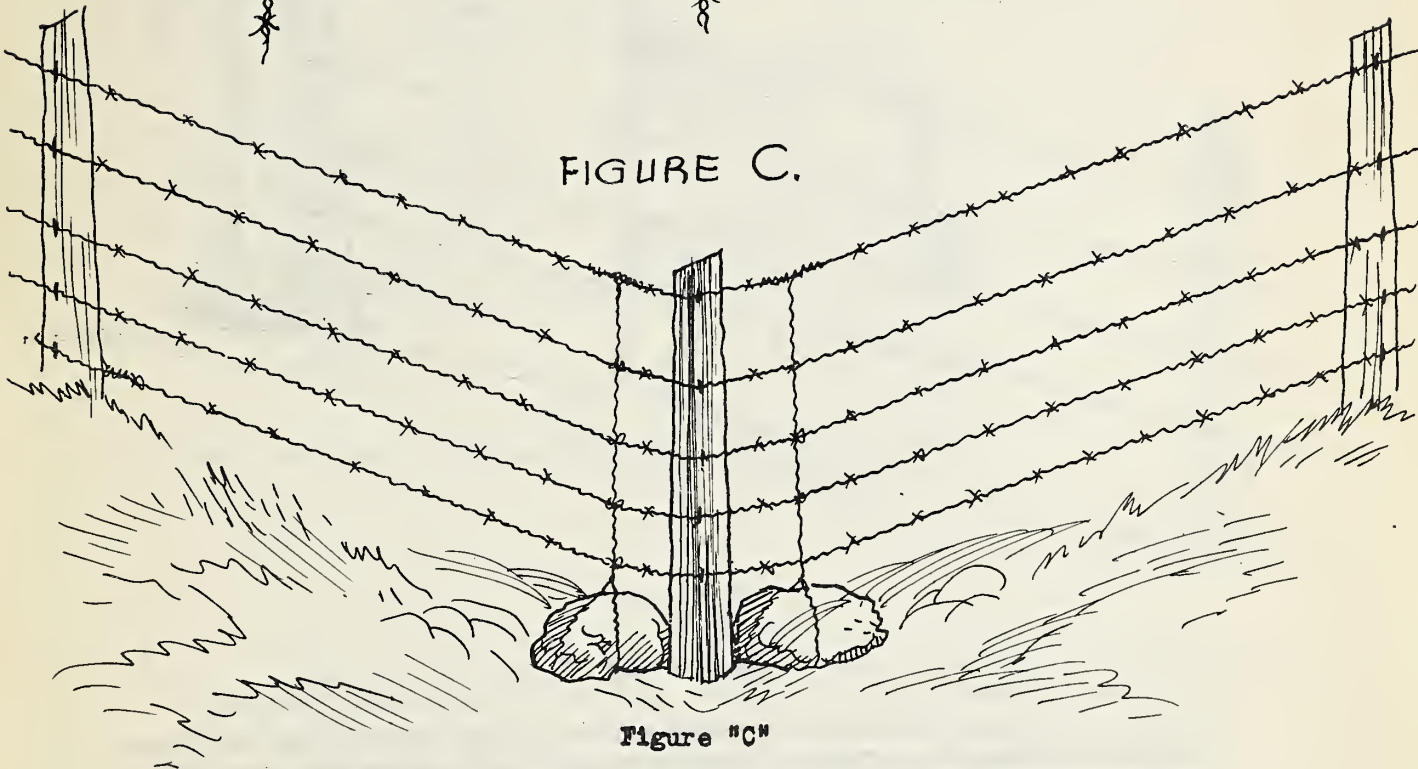


Figure "C"

Here the fence is shown in a wide sharp draw and weighted down with rocks. Use rocks of sufficient weights to offset the upward tension of the fence wires. This method is better than weighting down the post only, since the strain is counteracted at the source. Fastened on the fence wires in this manner the post will retain a satisfactory position and the wires will not pull the staples.

Figure "D"

A very neat looking tie can be made for use in connection with rock weights and water gates. Part the two strands of barbed wire a distance of approximately five inches; straddle the top fence wire with the resulting fork and twist in opposite directions from the point of intersection with the top strand.

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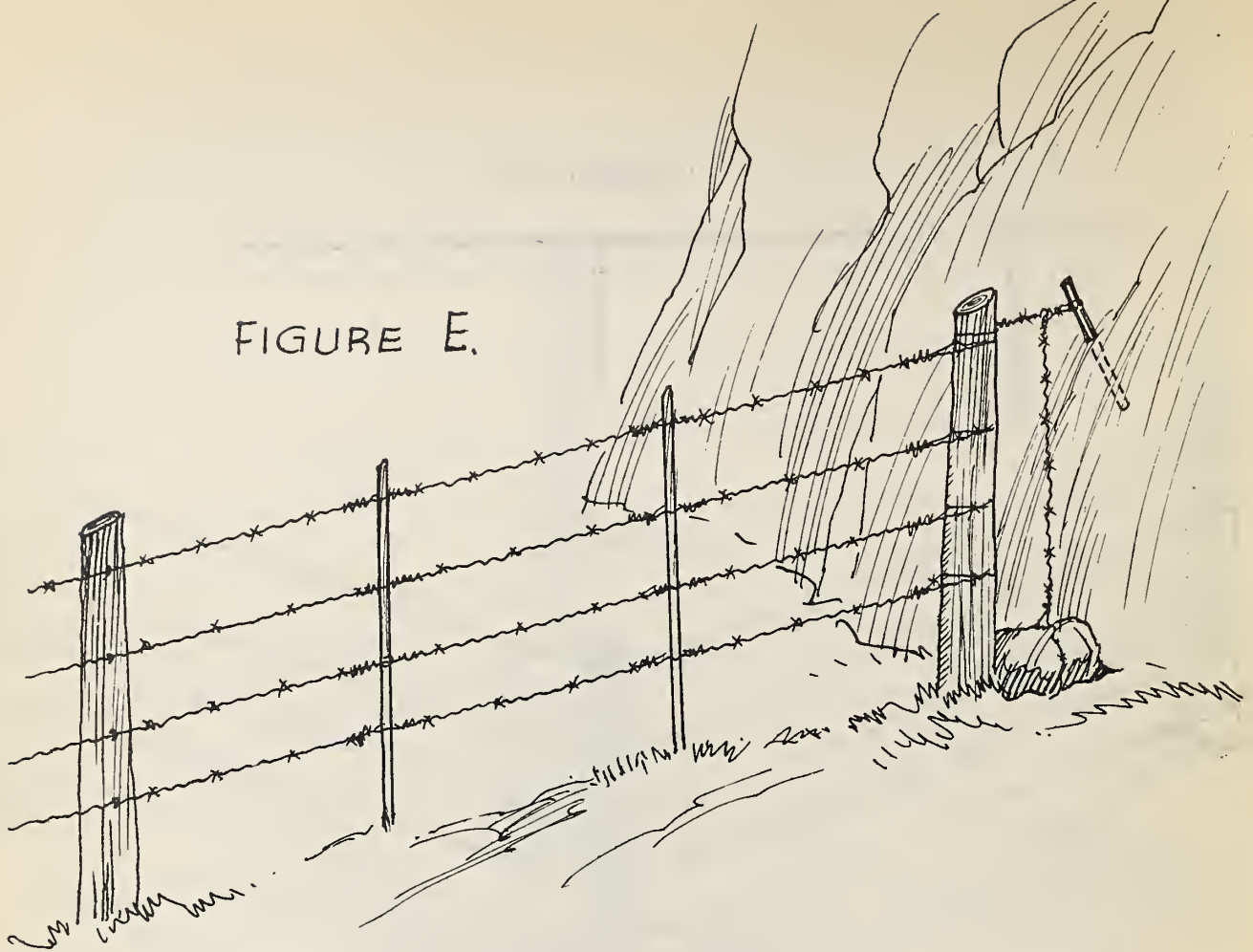


FIGURE E.

Figure "E"

In rocky country drilling and blasting is an every day occurrence in barbed wire fence construction. The blacksmith shop used in connection with the work will have a number of starter drills that have been broken or resharpened and headed until they have lost so much of their length as to be of little value. These should not be discarded. Sooner or later they can be put to good use when the fence butts against a rock cliff. Drill a hole in line with the fence, leaving the drill in the hole, tamp dirt around the drill and anchor to it. This is a money and labor saver over the brace method such as is necessarily used at corners and gates. If a gap between the post and the cliff results, due to variations in footing for the end post, close the gap with a wire and rock tie. In this case, however, the tension of the perpendicular wire need not be any greater than is necessary to keep it in position in order to make the fence "horse high, bull strong and calf tight".

FIGURE F.

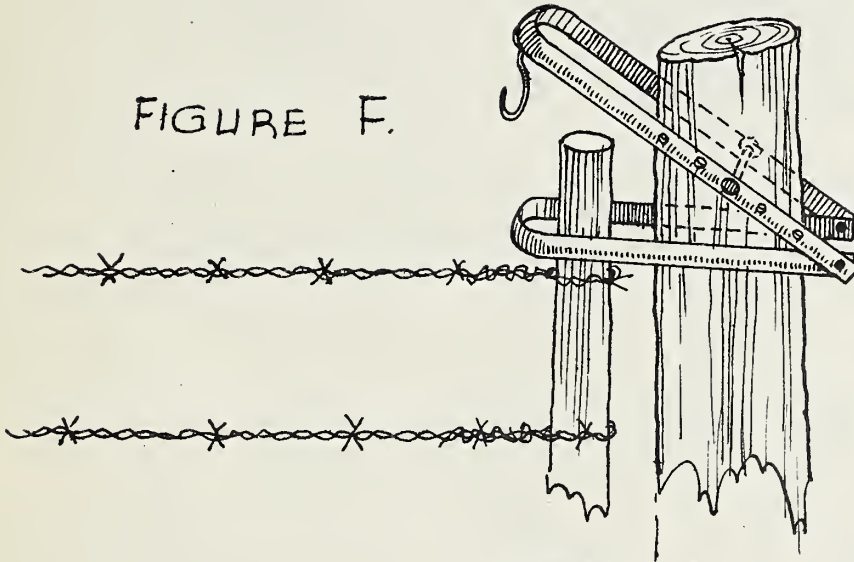
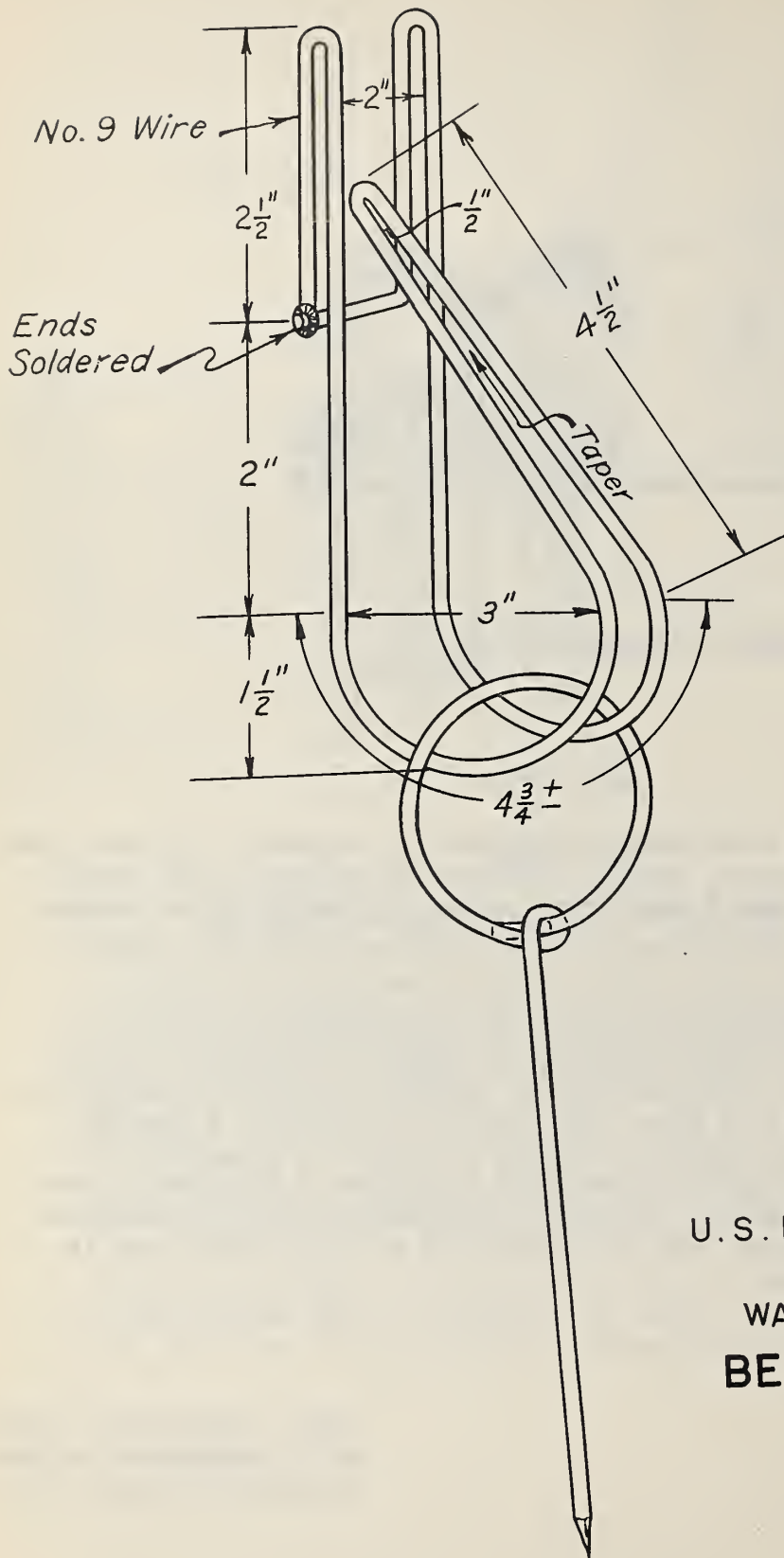


Figure "F"

This is a lever action gate hook and tightener. It was first sketched for me by Mr. Loring, Assistant Supervisor of San Isabel National Forest, and I have drawn it here in detail at his suggestion. It looks practical, to say the least, and he acknowledges its feasibility.

The drawing shows the gate in a half closed position. To close, pull the top loop downward and fasten the hook to the top wire of the gate. The top loop can be made of one and one-eighth by three-sixteenths inch strap iron, held to the post by a one-half inch bolt reaching entirely through to act as a bearing on both sides. The extra holes in the strap iron make it adjustable, thus insuring a tight gate. The bottom loop may be made of lighter material than the top. For it a piece from a heavy barrel hoop is suitable material.

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**BELT HOLDER FOR  
 CHAIN PINS**